

## RINSING A DIALYZER REPROCESSED WITH RENALIN® OR RENALIN 100

During the dialyzer rinse procedure it is important to take action to prevent the saline that is recirculating in the extracorporeal circuit from migrating into the saline bag. This migration can be prevented by clamping the saline administration set while recirculation is initiated. Once it has been established that the TMP has ramped up and the dialysate circuit is no longer in bypass, the clamp should be removed. Additionally, any saline remaining in the saline bag after the rinse procedure has been completed should be discarded and a fresh bag attached for use during dialysis. The recirculated saline in the extracorporeal circuit should never be used as a volume enhancer during the initiation of dialysis.

**NOTE: Prior to rinsing, verification of the presence of Renalin or Renalin 100 must be completed. Dialyzers must be checked for proper labeling and that the appropriate storage time (minimum of 11 hours) has been met.**

**NOTE: Aseptic technique must be followed during the rinsing process.**

**NOTE: Some line sets will have integrated line clamps. For line sets without clamps a smooth toothless clamp can be used.**

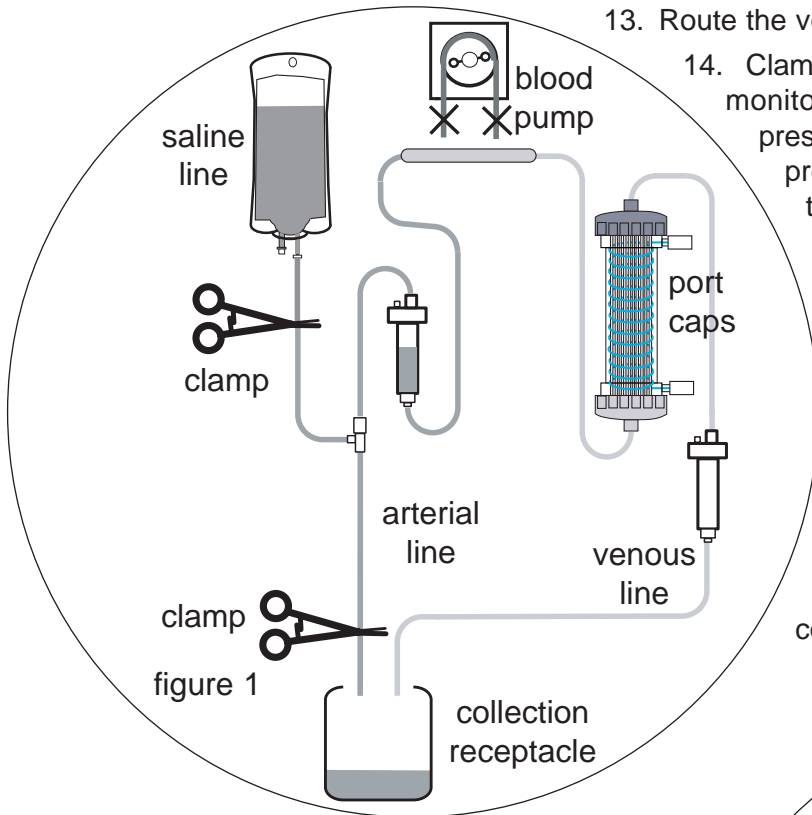
**NOTE: Some line sets incorporate vented caps that do not require opening of caps to prime the system. This helps lessen the possibility of contamination.**

**NOTE: Some line sets use a post pump arterial drip chamber. Some line sets use a arterial line pressure pillow without any arterial monitor line. The following procedure uses a line set with pre-pump arterial drip chamber and should work for any configuration with only slight modifications. Figures 1-5 will look slightly different if using a different type of blood line.**

### RINSING PROCEDURE

1. Check to ensure that the dialysis machine has been verified for normal operation and the machine alarm checks have been completed.
2. Place the dialyzer in its holder on the dialysis machine with the arterial end up. Do not remove any of the port caps.
3. Route the arterial blood line on the dialysis machine. Open the cap on the patient end of the arterial line (if not vented) and place over collection receptacle. Do not connect the arterial line to the dialyzer or place the pump segment (pump header) into the blood pump at this time. Take care not to contaminate the end of line.
4. Clamp the pressure monitor line, heparin line and any medication line(s). This can be accomplished with the pressure monitor line by connecting the line to the pressure port on the dialysis machine. A new transducer protector must be on the end of the monitor line before attaching the line to the pressure port.
5. Close the clamp on the saline administration (priming) set, attach it to a 1000 mL bag of normal saline and connect the saline administration set to the saline line on the blood tubing set.
6. Clamp the arterial line between the saline inlet and arterial drip chamber (or between the saline inlet and the blood pump segment if using a line set without a drip chamber).
7. Open the clamp on the saline administration set and prime the pre-pump portion of the arterial line by gravity.
8. Close the clamp on the patient end of the arterial line when air is purged. Close the cap if opened.
9. Open the dialyzer connector end of the arterial line (if not vented) and position the end over collection receptacle. Take care not to contaminate the end of line.

10. Remove the clamp on arterial line (*from step 6*) and allow normal saline to fill the rest of the arterial line. Fill arterial drip chamber approximately 2/3 full. Close the clamp on the saline administration set when all the air is purged from the arterial line.
11. Remove the blood port cap from the arterial end of the dialyzer and attach the dialyzer end of the arterial line to the dialyzer.
12. Invert the dialyzer venous end up.



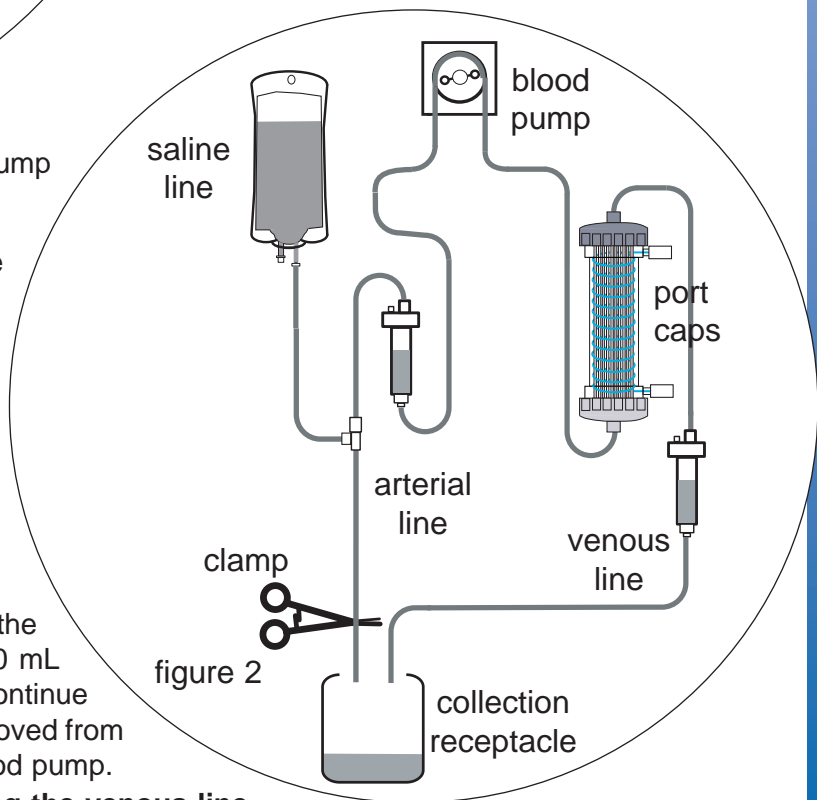
13. Route the venous blood line on the dialysis machine.

14. Clamp medication line(s) and the venous pressure monitor line. This can be accomplished with the pressure monitor line by connecting the line to the pressure port on the dialysis machine. A new transducer protector must be on the end of the monitor line before attaching the line to the pressure port.

15. Remove the blood port cap from the venous end of the dialyzer. Open the cap on the dialyzer end of the venous line and attach the line to the venous blood port of the dialyzer.

16. Open the cap on the patient end of the venous line (if not vented) and place it over collection receptacle. Take care not to contaminate end of line. (*figure 1*)

17. Thread the arterial pump segment (pump header) through the blood pump.
18. Open the clamp on the saline administration set and start the blood pump at a rate of 150 mL/min.
19. When fluid reaches the venous drip chamber, use the venous chamber-leveling device or unclamp the venous monitor line until it is approximately 2/3 full. Do not fill chamber above entry level of incoming fluid. (*figure 2*)

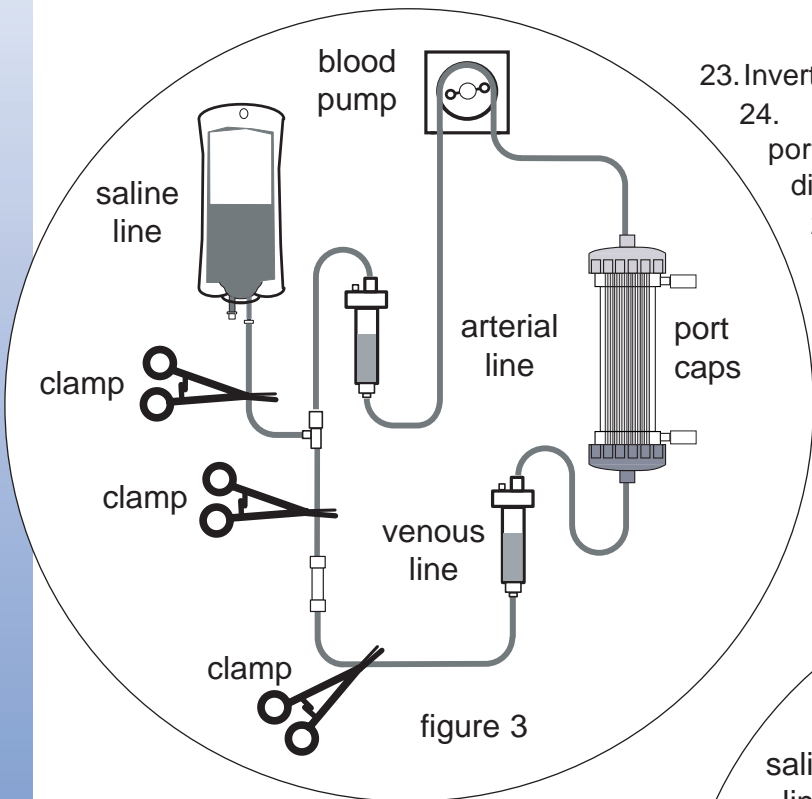


20. Continue to prime the saline through the lines and dialyzer until a minimum of 500 mL has drained out of the saline bag. Continue priming with more saline until all air is removed from the blood lines and dialyzer. Stop the blood pump.

**NOTE: Momentarily clamping and releasing the venous line during priming will aid in removing all air from the dialyzer.**

21. Clamp the saline administration line to prevent backflow of sterilant into the saline bag.
22. Clamp the patient end of the venous line. Remove connector on the end of the venous line and attach it to the connector on the patient end of the arterial line.

**CAUTION: Check that the dialysate is of the proper conductivity, pH and temperature.**



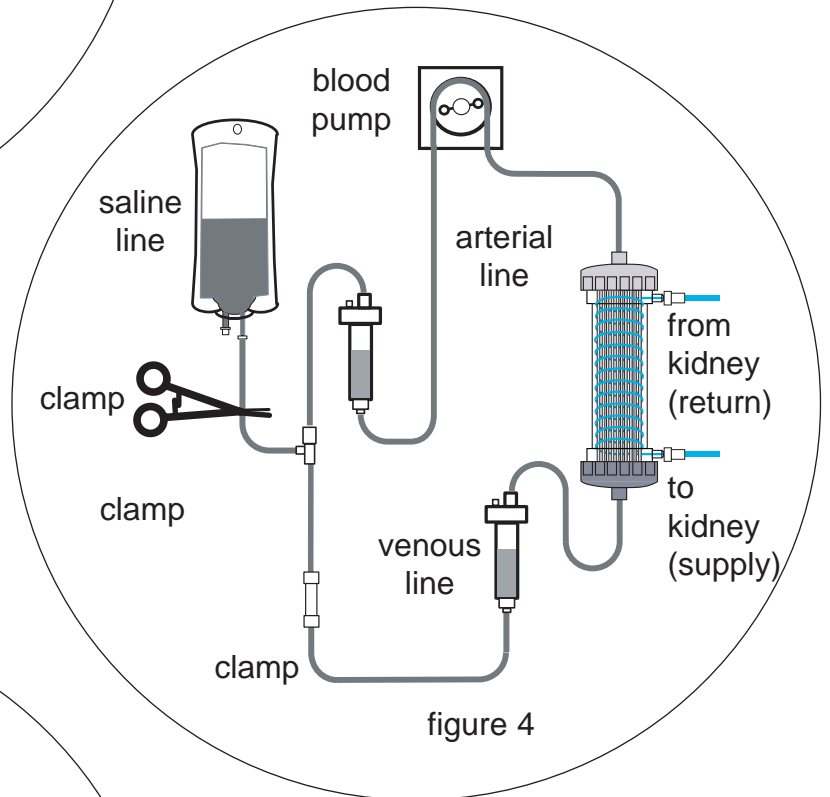
23. Invert the dialyzer arterial end up. (figure 3)

24. Remove the cap from the arterial dialysate port of dialyzer and attach the "from kidney" dialysate hose (return) to the dialyzer.

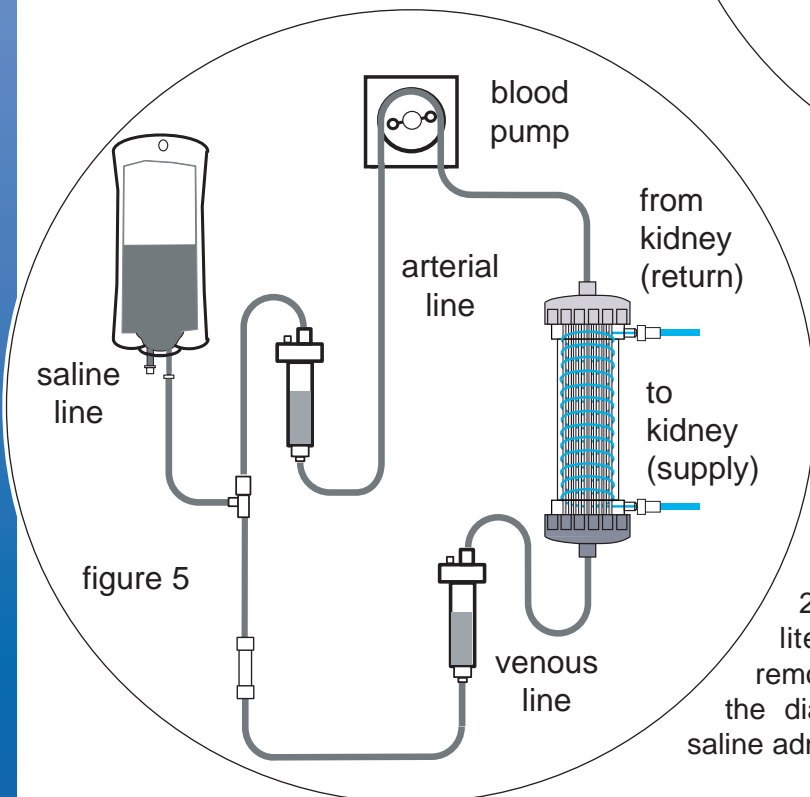
25. Remove cap from the venous dialysate port of the dialyzer and attach the "to kidney" dialysate (supply) hose to the dialyzer.

**CAUTION:** Initiating dialysate flow to the dialyzer prior to flushing the blood compartment of air may cause an air lock in the dialyzer fibers.

26. Start a dialysate flow of at least 500 mL/min and remove air from the dialysate compartment (dialysate flow on some dialysis machines may not start until the blood pump is turned on in Step 27).



27. Remove clamps from the patient ends of the arterial and venous lines. Make sure that the arterial and venous monitor lines (with attached transducer protectors) are attached to the pressure ports on machine and that monitor line clamps are open. Turn on the blood pump and set it for a rate of 300 mL/min. (figure 4)



28. Set the fluid removal rate at 2 liters/hour and recirculate. When the fluid removal program starts or the TMP ramps up and the dialysate comes out of bypass, unclamp the saline administration set. (Figure 5).

29. Recirculate for a minimum of 10 minutes (or set a fluid removal goal of 400 mL for 12 minutes). On machines without UF controllers, set the dialysate pressure to -300 mmHg and recirculate for a minimum of 10 minutes.
30. Check that normal saline is flowing from the normal saline bag to the blood lines (saline dripping through the bulb in the administration set) and that the bag is not empty.
31. After 10 minutes of recirculation, adjust to a minimum UF rate on the UF controller or maintain a slight negative pressure on non-UF controlled machines. Continue recirculation.

**CAUTION: Recirculation and a slight negative pressure should be maintained at all times between rinsing the dialyzer and patient connection. This process will prevent rebound of chemical sterilant.**

## USING A RENALIN RESIDUAL TEST FOLLOWING DIALYZER RINSE

After the completion of the rinse procedure on the dialyzer, a test should be performed to determine the level of residual proportional Renalin Cold Sterilant or Renalin 100 Cold Sterilant solution present.

Proceed with residual testing as outlined below. To perform residual test, use Renalin Residual Test Strip (P/N 78198-000).

1. Remove a test strip from the tube and immediately replace the lid.
2. Turn off the blood pump and clamp both the arterial and venous blood lines adjacent to the access (patient) ends. Separate the blood lines at the point where the access ends are joined. Unclamp the venous blood line.
3. Allow a few drops of saline to drip from the venous blood line onto a residual test strip. Do not allow the saline to flow through or over the open access end cap's top, or any object prior to contacting the strip.

**NOTE: Squeezing the venous drip chamber will aid in obtaining a sample for the test.**

4. Allow droplets of solution to remain on the reaction zone for five seconds.
5. Gently shake excess liquid and compare the reaction zone for five seconds.
6. If the strip indicates less than 3 ppm the dialyzer is safe for patient use (proceed to Step 8).
7. If the result is 3 ppm or greater, re-connect the arterial and venous blood lines and attach a new bag of normal saline. After attaching a new bag of saline purge the administration set, this may be accomplished by disconnecting the saline administration set from the arterial line and flushing the set. Attaching a new bag of normal saline will eliminate the possibility of a positive test due to migration of sterilant. Reconnect the administration set to the arterial line. Continue to recirculate until the test result indicates that the dialyzer has been adequately rinsed.

**CAUTION: If strip indicates dark blue to brown or green to brown, the concentrations are too high for the color scale and further rinsing of the dialyzer is needed.**

8. Reconnect the arterial and venous lines. Remove the clamp adjacent to the access end on the arterial line and continue to recirculate until the patient is ready to be connected to the dialysis machine. Continued recirculation will prevent rebound of chemical sterilant.

**CAUTION: Do not infuse recirculated saline into the patient as a volume enhancer.**

**CAUTION: Discard the rinse saline bag, attach new bag of normal saline and flush the saline administration set and the entire extracorporeal circuit with fresh saline before initiating dialysis.**



MinnTech Corporation  
14605 28th Avenue North  
Minneapolis, MN 55447 USA  
Tel: (763) 553-3300  
Toll Free: (800) 328-3340  
Fax: (763) 553-3387

MinnTech BV  
Sourethweg 11  
Heerlen PC6422  
The Netherlands  
Tel: +31 45 5 471 471  
Fax: +31 45 5 429 695

MinnTech Japan Corporation  
Sumitomo Seimei Bldg 4F  
10-10 Yochomachi Shinjuku-ku  
Tokyo Japan 162  
Tel: + 81 3 3225 8680  
Fax: + 81 3 3225 8681

MinnTech International  
Singapore Representative Office  
138 Robinson Road  
#15-09/10 The Corporate Office  
Singapore 068906  
Tel: + 11 65 6227 9698  
Fax: + 11 65 6225 6848